IN THE SPECIFICATION

Please amend paragraphs 040, 046, 050, 056, 058 and 064 as follows:

[040] The end face 30 has a precise axial spacing from the radial bearing face 22 on the shoulder 20, as described in more detail below. By finishing the end face 30 to a surface flatness such that it deviates less than about 0.0005" from the end face plane, the end face provides a frictional bearing surface that withstands substantial axial force. The end face 30 engages one face of a torque washer or button 32 having a like male thread 33 at its outer periphery. Both the pin end 23 of the sucker rod 12 and the torque

B_1 washer 32 fit within a coupler or sleeve 34 which is of API design but has a more precise length terminating at end faces 35, 36. The tolerance observed, given the nominal API dimension ([[4,000"]] 4.000" for most sizes) is ± 0.0005". An API specified female thread 38 is machined into the inner diameter of the coupler 34.

[046] These configurations predetermine not only axial positioning but also proper pre-stressing when pin ends are engaged to predetermined angles beyond the hand tight plane. The angles are those set by the applicable API (or manufacturers) card. This enables simplified and assured methods of assembling sucker rod strings with minimal down time. With reference to Fig. 5, the process begins with pre-screening and preparation of pins to assure they are within the stated dimensions and tolerances. The

B_2 pin shoulder and pin end face must be at 90° relative to the longitudinal axis of the pin, and the same is true of the end surface of the coupler. This assures that contact pressures are uniform about the circumference. It also assures that there is no bending

stress in the undercut length of the pin and minimal tendency to fail at the junction of thread and undercut. Note that, except for the torque washer, thread pitch diameter is not a factor, since the API threads are not tapered and mechanical securement is provided by axial engagement of thread faces, eliminating the damaging effects of helix and thread flank angle bending that derive from threads made according to the API standards. The thread surfaces are first lubricated with a compound, such as ~~"Seallube"~~ "SEALLUBE" which acts as an anaerobic adhesive after short term curing in place.

---

[050] When needed at a production site, as typified by the installation of Fig. 2, a supply of rods can be sequentially assembled into a continuous descending string quickly but with precise engagement of each. The positioning equipment which aligns a sucker rod in vertical orientation above the last previously installed rod enables entry of the lower pin end 23 with exposed threads into the open end of the facing coupler 34. The threaded surfaces have previously been coated with the ~~"Seallube"~~ "SEALLUBE" (or other) lubricant. After rotating the upper sucker rod 13 to engagement at the hand tight plane, the wrench flat 17 is engaged by a conventional power tool (e.g. hydraulic tongs) and the second sucker rod is turned through the same distance as the first rod, plus 0.650 inches circumferential displacement. The wrench flat 17 on the already installed rod will be held by backup tongs against rotation while this final turn increment is added. When completed, this connection pre-stresses the second pin end 23 and coextensive length of adjacent coupler 34 proximate the undercut pin neck 24 as described above, but changes the pre-stress relationships in the central region

significantly in different ways, and also introduces important structural factors. The torque applied in engaging the flat end faces varies with sucker rod size – typical minimum values being about 450 ft. lbs. for 5/8" rod, 1100 ft. lbs. for 1-1/8" rod, and 1400 ft. lbs for 1-1/2" rod. A 1" slim-hole rod is engaged to about 450 ft. lbs. or more.

[056] [[to]] To test tensile strength 4 specimens each of 7/8" sucker rods of proprietary high strength material (Norris) were prepared in accordance with the present invention and also API specifications. The average load to failure for specimens in accordance with the invention was 121,500 lbs; the average load to failure for the API sucker rods was 118,400 lbs. These results demonstrate that the design provides the drastic improvement in tensile properties mentioned above without sacrifice in tensile load performance.

[58] Further advantages of the present invention accrue from the locking of the wedge surfaces of the male and female threads which, in the API standards, employ a predetermined thread height to root depth relation that includes a gap sufficient to allow sliding and/or rocking of the wedge faces if not stressed axially. This accelerates fatigue failure, along with the high helix angle and thread flank angle. In addition to the prestress conditions which lock the thread, wedges, relative shifting between parts is inhibited by the ring-like contact area between the pin shoulder and the coupler end, and the disk-like contact area between the end face 30 of a pin 12 or 13 and the torque washer 32. ~~these~~ These factors also augment the resistance against thread backout, enhanced by anaerobic adhesive.

[064] With the two pin ends in abutting relation (directly or through the washer), the torque exerted by a power tong (as indicated by the hydraulic pressure) is the only measured value that is needed to establish the desired compressive force between the pin ends. On 7/8" rods, about 1200 ft. pounds of torque are used. The torque washer 56 is made of a dissimilar material from the rod pin ends, the end faces of which are themselves finished so as to provide flattened and uniform bearing surfaces. The average surface area, for a 7/8" rod pin end, is .889 in^2, more than double the shoulder to coupler surface area of contact. Further, the joint is made up using only torque and the anaerobic adhesive sealing compound, e.g. ~~"Seallube"~~ "SEALLUBE", developed for use on oil and gas well downhole threaded connections.